

Appl. No. 10/763,137
Amdt. Dated September 16, 2005
Reply to Office Action of June 16, 2005

Attorney Docket No. 88519.0002
Customer No.: 26021

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original): A semiconductor light emitting device comprising a light emission layer, consisting of a GaN system semiconductor, which is interposed between an n type GaN system semiconductor layer and a p type GaN system semiconductor layer, wherein there is provided a Ga-doped $\text{Mg}_z\text{Zn}_{1-z}\text{O}$ ($0 \leq z < 1$) electrode film.

2. (Original): The semiconductor light emitting device according to claim 1, characterized in that associated with a quantity of doped Ga, with which the $\text{Mg}_z\text{Zn}_{1-z}\text{O}$ ($0 \leq z < 1$) electrode film is doped, wherein a carrier concentration is $1 \times 10^{19} \text{cm}^{-3}$ or more and $5 \times 10^{21} \text{cm}^{-3}$ or less.

3. (Original): The semiconductor light emitting device according to claim 1, characterized in that there is provided a metal electrode, which supplies an electric current to either the n type GaN system semiconductor layer or the p type GaN system semiconductor layer, and that said Ga-doped $\text{Mg}_z\text{Zn}_{1-z}\text{O}$ ($0 \leq z < 1$) electrode film is formed between the n type GaN system semiconductor layer or the p type GaN system semiconductor layer, and the metal electrode.

4. (Original): The semiconductor light emitting device according to claim 3, characterized in that associated with a quantity of, the doped Ga, with which the $\text{Mg}_z\text{Zn}_{1-z}\text{O}$ ($0 \leq z < 1$) electrode film is doped, wherein a carrier concentration is $1 \times 10^{19} \text{cm}^{-3}$ or more and less than $5 \times 10^{21} \text{cm}^{-3}$.

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5. (Previously Presented): The semiconductor light emitting device according to claim 1, characterized in that there is provided a metal electrode, which supplies an electric current to either the n type GaN system semiconductor layer or the p type GaN system semiconductor layer, and that the metal electrode and the Ga-doped $\text{Mg}_z\text{Zn}_{1-z}\text{O}$ ($0 \leq z < 1$) electrode film adjoin each other; and the metal electrode and the Ga-doped $\text{Mg}_z\text{Zn}_{1-z}\text{O}$ ($0 \leq z < 1$) electrode film are arranged so as to be contiguous to the face of the n type GaN system semiconductor layer or the p type GaN system semiconductor layer.

6. (Original): The semiconductor light emitting device according to claim 5, characterized in that associated with a quantity of the doped Ga, with which the $\text{Mg}_z\text{Zn}_{1-z}\text{O}$ ($0 \leq z < 1$) electrode is doped, wherein a carrier concentration is $1 \times 10^{18} \text{cm}^{-3}$ or more and less than $5 \times 10^{21} \text{cm}^{-3}$.

7. (Currently amended): A semiconductor light emitting device comprising a light emission layer, consisting of a GaN system semiconductor, which is interposed between a n type GaN system semiconductor layer and a p type GaN system semiconductor layer, wherein there is provided a B-doped $\text{Mg}_z\text{Zn}_{1-z}\text{O}$ ($0 \leq z < 1$) electrode film disposed on one of the GaN system semiconductor layers.

8. (Original): The semiconductor light emitting device according to claim 7, characterized in that associated with a quantity of the doped B, with which the $\text{Mg}_z\text{Zn}_{1-z}\text{O}$ ($0 \leq z < 1$) electrode is doped, wherein a carrier concentration is $1 \times 10^{18} \text{cm}^{-3}$ or more and less than $5 \times 10^{21} \text{cm}^{-3}$.

9. (Original): The semiconductor light emitting device according to claim 7, characterized in that there is provided a metal electrode, which supplies an electric current to either the n type GaN system semiconductor layer or the p type

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GaN system semiconductor layer, wherein said B-doped $\text{Mg}_z\text{Zn}_{1-z}\text{O}$ ($0 \leq z < 1$) electrode film is formed between the n type GaN system semiconductor layer or the p type GaN system semiconductor layer, and the metal electrode.

10. (Original): The semiconductor light emitting device according to claim 9, characterized in that associated with a quantity of the doped B, with which the $\text{Mg}_z\text{Zn}_{1-z}\text{O}$ ($0 \leq z < 1$) electrode is doped, wherein a carrier concentration is $1 \times 10^{19} \text{cm}^{-3}$ or more and less than $5 \times 10^{21} \text{cm}^{-3}$.

11. (Previously Presented): The semiconductor light emitting device according to claim 7, characterized in that there is provided a metal electrode, which supplies an electric current to either the n type GaN system semiconductor layer or the p type GaN system semiconductor layer, wherein the metal electrode and the B-doped $\text{Mg}_z\text{Zn}_{1-z}\text{O}$ ($0 \leq z < 1$) electrode film adjoin each other and the metal electrode and the B-doped $\text{Mg}_z\text{Zn}_{1-z}\text{O}$ ($0 \leq z < 1$) electrode film are arranged so as to be contiguous to the face of the n type GaN system semiconductor layer or the p type GaN system semiconductor layer.

12. (Original): The semiconductor light emitting device according to claim 11, characterized in that associated with a quantity of the doped B, with which the $\text{Mg}_z\text{Zn}_{1-z}\text{O}$ ($0 \leq z < 1$) electrode is doped, wherein a carrier concentration is $1 \times 10^{19} \text{cm}^{-3}$ or more and less than $5 \times 10^{21} \text{cm}^{-3}$.